Inventor: Doi, Yutaka Serial No.: 09/752,660

Client Ref. No. H0001384 (4970) Our Ref. No. 100665.0026US1



Art Unit: 2841 Examiner: Patel, Ishwarbhai B.

TECHNOLOGY CENTER 2000

VERSIONS WITH MARKING TO SHOW CHANGES MADE

In the Specification

The Detailed Description of the Drawings section was amended as follows:

"Fig. 4 is a schematic-graphical diagram of a preferred method and embodiment."

Fig. 5 is a cutaway view of the graphical diagram of figure 4."

The paragraph beginning at page 7, line 28, was amended as follows:

"Figure 3 shows a preferred method 200 of preparing the layered component comprising an insulator layer having embedded passive components of two different kinds of materials. A substrate layer 100 is prepared 210 that forms the basis for the component contemplated herein. A metal trace or patterned metal layer 102 is laid down 220 as part of the substrate layer 100. An insulator layer 110 is laminated 230 onto the substrate layer 100. The insulator layer is imaged 240 creating an etching pattern 242 for the resistor 120. The imaged insulator layer 110 is etched 250 to create a compartment 122 for the resistor 120 while exposing a portion of the metal layer 102 that had been previously laid down as part of the substrate layer 100. The compartment 122 is filled 260 with the resistor material or paste 124. The insulator layer 110 is further imaged 270 creating an etching pattern 272 for the capacitor 130. The imaged insulator layer 110 is etched 280 to create a compartment 132 for the capacitor 130 while exposing a portion of the metal layer 102 that had been previously laid down as part of the substrate layer 100. The compartment 132 is filled 290 with the capacitor material or paste 154. Additional layers can then be added 300 to the finished insulator layer 110. A graphical diagram of this preferred method and preferred embodiment of the subject matter described herein is shown by the detailed example in Figures 4 and 5."

In the Claims

Claim 11 was amended as shown.

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1. An electronic component, comprising:

a substrate layer; and

- an insulator layer coupled to the substrate layer, wherein the insulator layer comprises an insulating material, a first etched compartment filled with a capacitor material, and a second etched compartment filled with a resistor material, wherein the resistor material differs from the capacitor material and both the resistor material and capacitor material differ from the insulating material of the insulator layer.
- 2. The electronic component of claim 1, further comprising at least one additional layer coupled to the insulator layer.
- 3. The electronic component of claim 2, wherein the at least one additional layer comprises at least one of a metal, a polymer, an inorganic compound, a monomer, an organometallic compound and a metal alloy.
- 4. The electronic component of claim 1, wherein the electronic component is a printed circuit board.
- 5. The electronic component of claim 1, wherein the substrate layer comprises at least one layer.
- 6. The electronic component of claim 5, wherein the substrate layer comprises a silicon wafer.
- 7. The electronic component of claim 6, wherein the substrate layer further comprises a layer of conductive material.
- 8. The electronic component of claim 7, wherein the layer of conductive material comprises copper or nickel.
- 9. The electronic component of claim 1, wherein the insulator layer is coupled to the substrate layer by a laminating material.

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10. The electronic component of claim 1, wherein the insulator layer comprises at least one of a polycarbonate, a fused silica compound and an alumina compound.

- 11. (Amended) The electronic component of claim 1, further comprising a first embedded passive component in the first etched compartment and a second embedded passive component in the second etched compartment wherein the first passive component is a resistor-capacitor comprising the resistor capacitor material and the second passive component is a capacitor resistor comprising the capacitor resistor material.
- 12. An electronic product comprising the electronic component of claim 1.